STANDARD TIME.

The Editor has previously had occasion to explain how the study of the reports of auroras and earthquakes collected by the Signal Service led him, in 1874, to see that accurate results could never be deduced from the numerous reports and conflicting statements unless some simple standard of time could be adopted by the whole community. In those days every railroad and city had its own standard and sometimes half a dozen different clocks could be found in the same central or union depot. In May, 1879, he presented a report to the American Metrological Society of New York, recommending the system of hourly meridians counted from Greenwich, as a first step toward the universal use of Greenwich time itself. When this recommendation had been adopted by the railroad and transportation companies, through the active advocacy of W. F. Allen, as general superintendent of railroad time tables, and when it had been recommended by the International Time and Meridian Conference there was no longer any doubt that it would eventually, but perhaps slowly, be adopted throughout the world.

These expectations have already been most fully realized. In a few cases smaller subdivisions, such as a half or quarter of an hour, have been preferred. We believe that France still holds out against the Greenwich meridian and prefers that of the Paris Observatory. The last important government to agitate the subject is that of the Empire of India. According to Science and the London Times the last issue of the Proceedings of the Asiatic Society of Bengal contains a paper on this subject by the Superintendent of the Geological Survey of India, Mr. Oldham, who describes the present system of that country as simply "barbarous." The railways and the telegraph department adopt Madras mean time, but each town and city has its own time, which is neither local mean time nor any other time. It requires forty-four pages of the official telegraph guide book to enumerate the local variations from the standard time. Mr. Oldham states that inextricable confusion has been introduced into a large number of records of the great earthquake of 1897, and urges that the hour zone system be adopted to the exclusion of all others.

In this connection, the Editor would repeat what he has had occasion to say before, namely, that telegraphs, telephones, and first-class clocks and watches are now so universal that it is easy to get standard Greenwich time at any locality and to any degree of accuracy, but not so easy to get local astronomical mean time. The irregularities in the records due to errors in defining what time is actually used by any observer are now much more important to students of meteorology, seismology, terrestrial magnetism, and auroras than in former times, since we now have so many more observers and strive after greater accuracy in the results. There are a few problems in which the consideration of local mean time is important; for such study the records kept on the Greenwich hour standards can easily be converted into mean time records by the student himself. But in many other most important respects, standard Greenwich time itself is both convenient to the observer and essential to the investigator. The advantages of adopting the local Greenwich time and day for ll studies of atmospheric storms and changes outweigh the disadvantages.

The change to one standard from a hundred different local or quasi-local times which began in October, 1884, was resisted by many for fear it would make the sun set a little too early or change the hours of work and meals. Similar objections were made two hundred years ago, when mean time clocks began to supersede the sun dial and the gnomon. In fact, the English common law still requires that noon shall be noon by the sun, which may be fourteen minutes later than mean noon in February, or four minutes earlier in May, or six minutes later in July, or sixteen minutes earlier in November. Now, however, these unnecessarily conservative and antiquated objections are replaced by the conviction that so long as their watches all agree the people of a given region will know exactly what is meant when a given hour is mentioned, and this precision and uniformity is worth everything to a civilized community.

With the spread of ocean cables and the daily presentation of news from a hundred places scattered over the whole globe, it is now necessary for us to contemplate the next step in the use of standard time by the civilized world. Every one daily finds himself figuring out whether a certain event occurring in the Philippines at 10 a. m. happened this morning or yesterday morning. Our international commercial intercourse will become precise only when we adopt Greenwich dates and Greenwich time throughout the world. This improvement, conducing as it does to the transaction of daily business, will not injure but rather be helpful to meteorology. No one has ever attempted to plot upon an ocean chart the observations of a storm by a hundred vessels at sea, but has found inextricable difficulty with records that are kept by the rules of the ancient navigators; the trouble is with the date of the month and day of the week. The modern navigator and the modern business man will do well to think, speak, and write of Greenwich days and dates only, if he would attain precision in current history.

THE ETHER AND THE ATMOSPHERE.

A correspondent proposes the following theory as to the cause of atmospheric changes:

I have a camphor barometer hermetically sealed so that the air can not directly produce any changes within the liquid. It frequently indicates weather changes thirty-six hours in advance. This has led me to suppose that atmospheric changes are due, primarily, to the action of the ether, as ether waves alone could penetrate the glass to the liquid within the sealed up tube. Kindly state whether our knowledge of the relations that ether waves bear to our atmosphere render such an hypothesis tenable?

The following is quoted from the Editor's reply:

The Weather Bureau does not generally commit itself to any theory as to the ultimate causes of meteorological phenomena. We speak of the heat received from the sun as the cause of the warmth of the ground and air and of evaporation and all resulting atmospheric disturbances. We recognize the fact that the light and heat can not come from the sun to the earth without the intervention of the ether of space, which is merely the carrier, and would have no appreciable influence if the sun did not set it in motion. Physicists tell us that everything done by ponderable atoms and molecules is due to the action of the ether forcing them hither and thither. But these questions belong to the study of molecules and not to the study of meteorology as such.

It is evident that in the present state of meteorology the action of solar radiation on the atmosphere is so complex that for aught we know all observed meteorological phenomena result from this one source of disturbance, and until we have completely explored this main subject, we have no reason to abandon this study and call upon new hypotheses to help us.

FROM HONOLULU TO IOWA.

Under date of June 7, Mr. Curtis J. Lyons writes to the Editor, from Honolulu:

I am of the opinion that the electric storm and tornado area which prevailed with you on May 28, passed here on the 18th.